UNIVERSITY OF GONDAR

COLLEGE OF MEDICINE AND HEALTH SCIENCES

DEPARTMENT OF INTEGRATED EMERGENCY OBSTETRICS AND SURGERY

ASSESSMENT OF KNOWLEDGE ABOUT DANGER SIGNS OF OBSTETRIC COMPLICATIONS AND ASSOCIATED FACTORS AMONG POSTNATAL MOTHERS OF FELEGE HIWOT REFERRAL HOSPITAL, NORTH WEST, ETHIOPIA, 2015

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Acronyms

ANC	Antenatal Care
CI	Confidence Interval
EDHS	Ethiopian Demographic Health Survey
FMOH	Federal Ministry of Health
MMR	Maternal Mortality Ratio
WHO	World Health Organization
FHRH	Felege Hiwot Referral Hospital
UOG	University Of Gondar
HEW	Health Extension Worker
AOR	Adjusted Odds Ratio
COR	Crude Odds Ratio
C/S	Cesarean Sect
ETB	Ethiopian Birr
OR	Odds Ratio
PNC	Postnatal Care
SVD	Spontaneous Vaginal Deliver

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ABSTRACT

INTRODUCTION: Globally, an estimated 289,000 of maternal death occurred in 2013 only. Developing countries like Ethiopia contribute the highest level of maternal mortality due to direct or indirect obstetric complications. Women awareness of obstetric danger sign to recognize those complications early to seek medical care without delay is first to intervene in an effort to decrease maternal death. However; little data is found on knowledge of mothers about danger signs of obstetric complications in Ethiopia.

Objective: To assess knowledge about danger signs of obstetric complications and associated factors among postnatal mothers at Felege Hiwot Referral Hospital.

Methods: A hospital-based cross-sectional study that involved an exit interview was conducted from June to September 2015 in Felege Hiwot referral hospital. Systematic random sampling technique was used to select 410 study participants. Data were entered to EPI-INFO (3.5.1) and exported to SPSS (20) for further analysis. Logistic Regression was applied to identify association between explanatory variable and the outcome variable. Odds ratio with 95% Confidence interval was used to determine the presence and strength of association.

Results: The proportion of mothers' who were knowledgeable about danger signs of obstetric complications in this study was 59.0%. Maternal educational level above secondary (AOR=6.91, 95%CI(1.62,19.53), family monthly income >3500 (AOR=3.38,95%CI(1.20,13.96) , discussing health Issues with health extension workers (AOR=4.23, 95%CI(1.83,9.70) and decision making power for service utilization(AOR= 0.14 , 95%CI(0.07,0.27) were variables found to be significantly associated with women knowledge on danger signs of obstetric complications.

Conclusion and Recommendations: Significant proportion of respondents were not knowledgeable about danger signs of obstetrics complication and factors like educational status, monthly income ,decision making power and discuss health issue with HEW were found to be associated. So a call for concerned body to improve women knowledge by designing strategic plan targeting information, education and communications provision to women during each period of pregnancy state and facilitate income generating mechanisms was recommended.

1. INTRODUCTION

1.1. Statement of the problem

Pregnancy is a period when women body under goes physiological changes which may entirely normal throughout pregnancy, childbirth and postpartum/perpurium period. However, this normal process may sometimes overcome by serious complications which may affect the life of mothers and newborn contributing maternal mortality and morbidity to the highest level (1).

Maternal death is death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy(2).

Usually from major obstetric complications during pregnancy, childbirth or postpartum, such as hemorrhage (25%), sepsis/infection (15%), eclampsia /preeclampsia (12%), obstructed labour (8%) and unsafe abortions (13%) as direct cause which together accounts for (75%-80%) globally (3).

World health organization (WHO) reported that, globally an estimated 289,000 number of women died during and following pregnancy and childbirth related problem in 2013 alone, Show a decline of 45% from 1990 report. Developing countries like sub-Saharan (62%) and south Asia (24%) together contributes 86% of the problem(4, 5). It has been reported that Ethiopia is one of the six countries that contributes about 50% maternal death, the others being India, Nigeria, Pakistan, Afghanistan and the Democratic Republic of Congo (6, 7). Despite government commitment to reduce maternal death by three-quarters from an estimated 523000 in 1990 to 250 in 2015, maternal mortality ratio (MMR) still estimated at 420 per 100,000 live births in Ethiopia (8, 9,27).

Maternal mortality in resource poor nations has been attributed to three delays: delay in deciding to seek care, delay in reaching to seek care on time and delay in receiving adequate treatment. Among all, the major cause for first delay is lack of awareness about obstetric danger signs to decide to seek care among mothers and community (10). These danger signs are not the actual obstetric complications, but suggestive symptoms that are easily identified by mother herself and non-clinical personnel. They are danger signs like severe vaginal bleeding, severe headache, pre term labour, rupture of membrane

before onset of labour, epigastric pain, severe abdominal pain, prolonged labor (>12 hours), Convulsions and retained placenta, foul-smelling vaginal discharge, and fever which probably occur during phases of pregnancy (11).

Lack of information on the warning signs of complications during pregnancy, parturition and postpartum period hampers women's ability to partake fully in safe motherhood initiatives. As awareness of danger signs of obstetric complications are the essential first step in accepting appropriate and timely referral to obstetric care; it is important that woman should have knowledge regarding danger signs of obstetric complications to enable them respond appropriately (12).

National reproductive strategy of Ethiopia, has given emphasis to raise mother's knowledge about danger signs of obstetric complications. According to this strategic plan by federal ministry of Ethiopia (FMOH), 80% of all families including mothers should recognize at least three danger signs associated with pregnancy related complications (13). However; little is known about the current level of mothers' knowledge and associated factors in Ethiopia as research evidence from different parts of Ethiopia revealed (14, 15,28).Therefore, this study aims to assess the current status of knowledge about obstetric danger signs and associate factors among postnatal mothers in the FHRH.

1.2. Literature review

1.2.1. Knowledge about danger signs of obstetric complications

Different literature showed that, there was different knowledge level among women on danger signs of obstetric complications.

Research evidence from Guatemala indicated that; about 61% of pregnant mother were aware of antenatal danger signs(16). Another study done in Jordan among pregnant women also showed that about 84.8% of women were unaware of danger signs and symptoms of obstetric complications (17).Research finding from India also showed, about 54% of women were knowledgeable regarding danger signs of obstetric complications during pregnancy (18).

Study conducted in Egypt indicated that, about one quarter (26.5%) were unaware of obstetric danger signs compared to almost the same proportion (26.0 %) that had good awareness about the obstetric danger signs, while 47.5 % of the study subjects exhibited fair awareness (19). Another study finding in province of KwaZulu-Natal of South Africa shows that, about (48%) of

all pregnant women did not know any danger signs. Only 2% of pregnant women know four danger signs (20). Study done in the Nigeria also showed that, most (94.7%) knew at least one danger sign of pregnancy. Majority (77.6%) knew at least one child birth danger sign (21). Research done in Uganda revealed that, about 52%, 72%, 72% of women knew danger signs of obstetric complications during pregnancy, labor and delivery, and postpartum period respectively. Only (19%) of women had knowledge of three or more key danger sign during the three periods (22). Similar study done in the rural Tanzania also indicated that, women knowledge of obstetric danger sign was found to be low. Only during pregnancy (26%), during delivery (23%) and after delivery (40%) were knew danger signs of obstetric complications. Majority (74.4%), (77.2 %), (60.1% did not know danger signs of obstetric during pregnancy, delivery and postpartum period respectively (23). A community based cross-sectional study done in sidama zone southern Ethiopia revealed that; about of (39.0%) women didn't know any danger signs of pregnancy and only (30.4%) mentioned at least two danger signs during pregnancy and (41.3%) of respondents mentioned at least two danger signs during labour and childbirth. Around (37.7%) of the pregnant women mentioned at least two serious danger signs during post partum period (14).

Another study done in Tsegedie District (Ethiopia) indicated that; more than half (58.8%) respondents were knowledgeable about danger signs during pregnancy and (35.1%) didn't know any danger signs of pregnancy. About (61.6%) of respondents mentioned at least two danger signs during labor and childbirth and (31.8%) didn't know any danger signs of labor and delivery (15).

A community based cross-sectional study done in Arba Minch town, Gamo Gofa zone, southern Ethiopia revealed that one hundred eighty four (47.2%) of women knew at least one key danger signs during pregnancy,(49.5%) during delivery and 73% during postpartum. Only 24.1%women were knowledgeable of seven or more key danger signs during pregnancy, labor, and postnatal period(28).

1.2.2. Factors associated with danger signs of obstetric complications

As study done in India, Guatemala and Jordan indicated; marital status, age at interview, being advised during ANC follow up on obstetric danger sign, maternal and husband educational level were factors found to be associated with their knowledge (16-18).

Study from Egypt showed that, study subjects' age, occupation, parity, place of previous delivery and attendance of antenatal care were significantly associated with mothers knowledge of obstetric danger sign (19).

Another research from Uganda revealed that, ANC, high level of education, being parity, urban resident and being employer were associated with women knowledge of obstetric danger signs (22).

Research conducted in rural Tanzania also showed that, the likelihood of awareness of obstetric danger signs increased with age, number of deliveries, number of antenatal visits, when delivery was at a health institution, and when the mother had been informed of having a risk factor or complication during antenatal care. For instance, having secondary education or higher increased the likelihood of awareness of obstetric danger signs by six-fold (23, 24).

Study carried out in Sidama zone of Ethiopia showed that; urban residence, being currently marital union and having attended high school and above and multiparty were independently associated with danger signs of obstetric complications (14).

Similarly Research evidence investigated in Tsegedie District, Ethiopia indicated that; age, educational status of the mother, source of information, maternal parity and place of delivery were independently associated with maternal knowledge of obstetric danger signs. For example mothers who were gave birth at health institution were 12 times more knowledgeable that those gave birth at home (15) . Study carried out in Gamo Gofa zone of Ethiopia showed that; age, educational status, income, and decision making power were significantly associated with knowledge of obstetric

danger signs (28)

CONCEPTUAL FRAME WORK

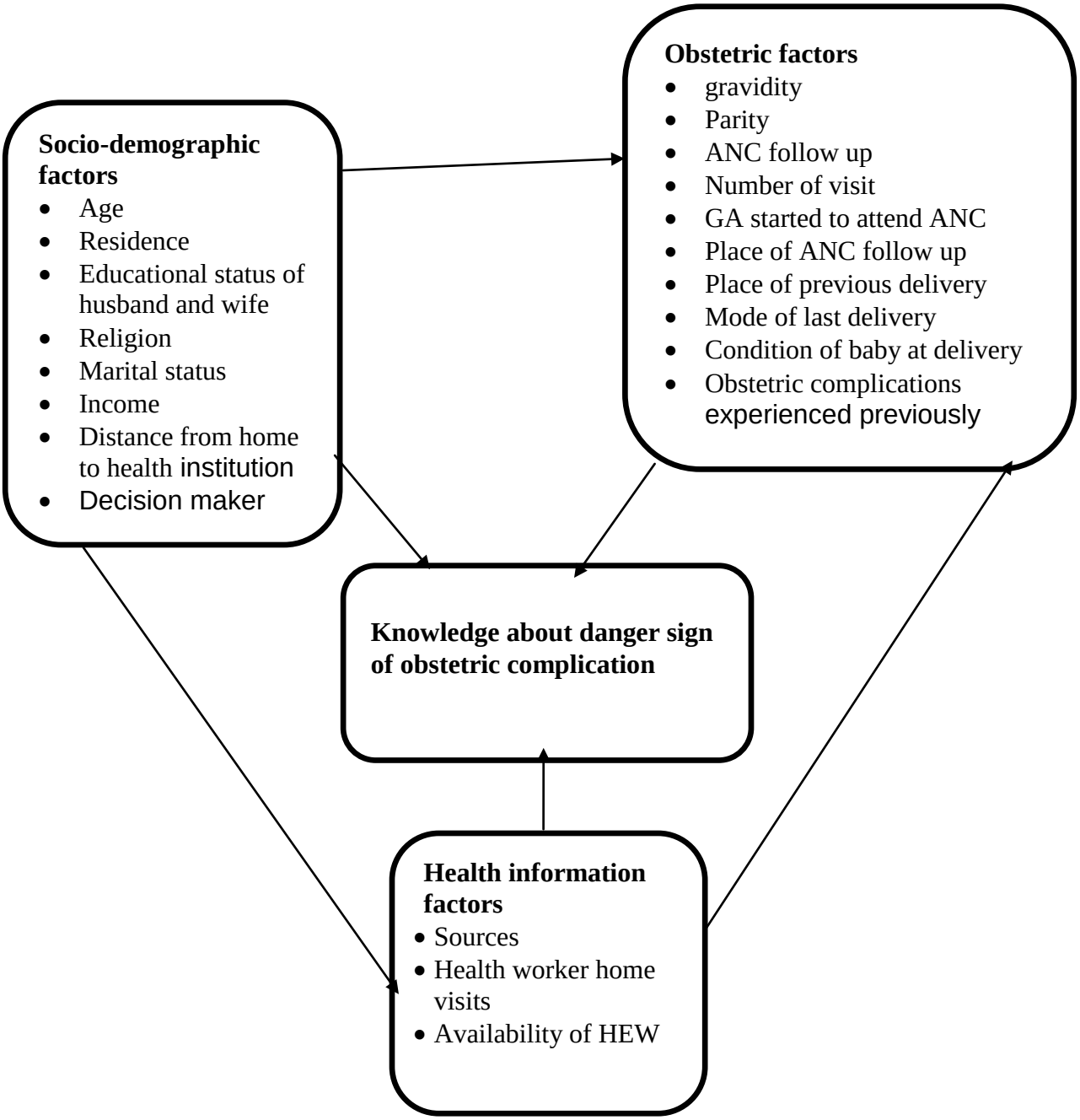


Figure 1: Conceptual framework on knowledge about danger signs of obstetric complications and associated factors .Source- developed after different literature was reviewed

1.3. Justification

Maternal death due to obstetric complications still poses substantial burden in Ethiopia. Though Government of Ethiopia was strive to reduce maternal deaths to 250 per 100,000 live births by 2015, but currently we are running with 420 maternal mortality ratios.

Poor awareness of obstetric complications during pregnancy, childbirth and after delivery among mothers and community contributed to maternal mortality.

There are danger signs of those obstetric complications that could be recognized by women themselves to be aware of their health conditions to seek medical service early without delay. Therefore raising mothers knowledge is profound important.

Despite some studies have been done to address this area of concern in Ethiopia, no study was done to assess mothers knowledge about danger signs of obstetric complications and associated factors in the study area to identify the gaps, as far as my knowledge is concerned. Therefore this paper attempts to assess knowledge about danger signs of obstetric complications and associated factors among postnatal mothers of FHRH. The result of this study may provide insight information on women's knowledge about obstetric danger signs in the study area which could help in designing appropriate interventions and as a base for further wide scale studies.

2. OBJECTIVES

2.1. General objective

- To assess knowledge about danger signs of obstetric complications and associated factors among postnatal mothers at FHRH, West Gojam Zone,Ethiopia,2015.

2.2. Specific objectives

- To determine knowledge about danger signs of obstetric complications among postnatal mothers of Felege Hiwot Referral Hospital
- To identify factor associated with mother's knowledge about danger signs of obstetric complications at of Felege Hiwot Referral Hospital

3. METHODS

3.1. Study design

Hospital based cross-sectional study design was conducted

3.2: Study area and period.

This study was conducted in obstetric department at Felege hiwot Referral hospital which is found in Bahir dar town, the capital city of Amhara Region, located 567 km from the capital Addis Ababa .A total population of Bahirdar town was 288,200 in 2013 G.C from which 147,397(51.2%) were female population & and the total number of pregnant women were 9331(3.24%).The number of deliveries & ANC follow up in 2012 G.C in this hospital was 2278 & 5150 respectively. The hospital is serving for a total population of about 2.1 million peoples of Bahir dar town, West Gojam Zone, Awi Zone, South Gondar, part of East Gojam zone. Currently, Felege hiwot Referral Hospital provides both outpatient & inpatient services. The study period from June to September, 2015.

3.3. Source population and Study population

3.3.1. Source population

All postnatal mother of Felege Hiwot Referral Hospital, West Gojam Zone, who gave birth within six weeks irrespective of birth outcome.

3.3.2. Study population

All postnatal mothers of FHRH who gave birth within six weeks come during data collection period.

3.4. Inclusion and exclusion criteria

3.4.1. Inclusion criteria

- Postnatal mothers who gave birth within six weeks at FHRH irrespective birth outcome came for postnatal services during data collection period.

3.4.2. Exclusion criteria

- Mentally incapable and severely ill mother's who were unable to respond

3.5. Sample size and Sampling procedures

3.5.1. Sample size

Using single proportion formula; sample size was determined by considering the assumptions of : 58.8% proportion of Tsegedie district mother's knowledge of obstetric danger sign of during pregnancy period (15), 95%CI, 5% degree of precision

Where: n= Sample size.

p = proportion is 58.8%

d = maximum allowable error (margin of error) = 0.05

Z = value of standard normal distribution (Z-statistic) at 95% confidence level which is1.96.

$\mathbf{n}= (Z_{\alpha/2})^2 P (1-P)/d^2$

$(1.96)^2 .588(1-.588)/(.05)^2$

n =372

Sample size by using epi info for each associated factors

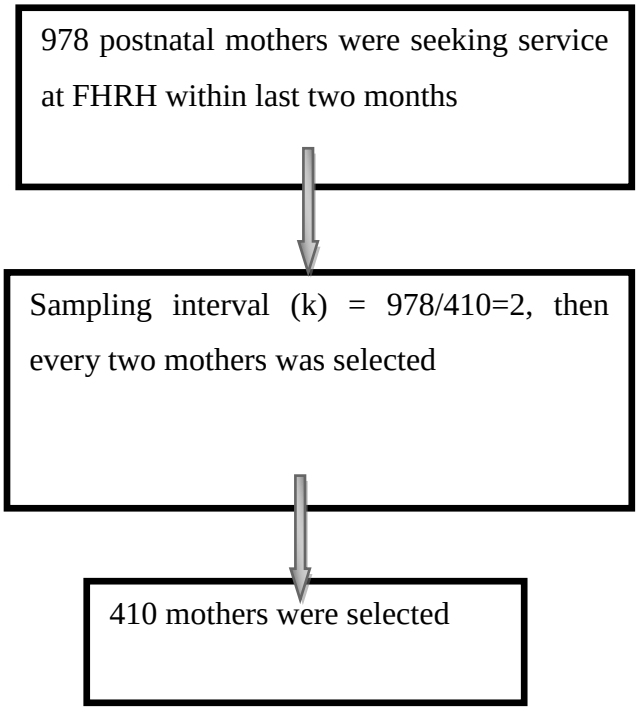
Factors	Confidence interval	Odds ratio	Proportion-(p)	power	Ratio	Total Sample size
Previous place of delivery	95%	2	12	80%	1:1	265
Age	95%	2	25	80%	1:1	165
Source of information	95%	2	24	80%	1:1	168
Educational status	95%	2	22	80%	1:1	176

Table 1: This table show sample size calculated by using epi info for each factor but sample size by single proportion give largest sample size.

So the final sample size by adding 10% non-response rate was =410

3.5.2. Sampling procedures

Systematic random sampling procedure was used to select study participants based on the previous daily client flow of the units which was obtained by referring client registration book 2 month prior to data collection **(**fig 2). Schematic presentation of sampling procedure



3.6. Variables of the study

Dependent variable

Knowledge of danger signs of obstetric complications

Independent variable

1. socio-demographic variables

- Age
- Place of residence
- Maternal educational status
- Occupational status
- Marital status
- Religion
- Family monthly Income
- Time taken to reach nearby healthy facility
- Husband educational status
- Decision making power in the house

2. Obstetric characteristic variables

- gravidity
- Parity
- ANC visit during the last pregnancy
- Gestational age at start of ANC
- Place of ANC follow up
- Number of ANC visits during last pregnancy
- Place of last delivery
- Any obstetric complications experienced before
- Mode of last delivery
- Condition of baby at delivery

3. Health information variables.

- Source of health information
- Availability of health extension worker(HEW)
- Health worker home to home visit to discus about health issue

3.7. Operational definitions

Knowledge:-knowledge in context of this study is the ability to mention danger sign of obstetric complications during pregnancy, child childbirth and post partum period in general.

Knowledgeable: -Ability of respondents to mention at least three and above key danger sign of obstetrics complication.

Not knowledgeable: - Inability of respondents to mention at least three and above key danger sign of obstetrics complication.

Danger signs: - Are manifestations of obstetric complications that easily identified by mothers and non-clinical personnel and necessitate skilled care that may occur at any time during pregnancy, childbirth and postpartum period which resulted in life threatening, such as vaginal bleeding, loss of consciousness, decreased fetal movement, fast or difficult breathing, excessive vomiting, preterm labor, passage of liquor, severe headache, blurring of vision, convulsion, epi-gastric pain, high grade fever, severe abdominal pain, retained placenta, prolonged labor, foul vaginal discharge and others (11)

Obstetric complications:- any obstetric complications which occur during pregnancy, childbirth and postpartum period or aggravated by pregnancy state and resulted in maternal and child mortality and morbidity (25).

Postnatal mothers:-mothers in postnatal period immediately after birth of child and extending for about six weeks.

3.8. Data collection procedures

Pretested and structured interviewer administered questionnaire, which was first prepared in English and translated into local language was used to obtain information on socio-demographic, obstetric history, health information variables and knowledge of women about danger signs of obstetric complications during pregnancy, childbirth and postpartum period. Three BSC midwives were used as data collector after one day training was given for them with their respective supervisor one Public Health officer on the aim of the study, procedures, and data collection techniques going through the questionnaires and clarification was given on ways of

collecting the data. Informed verbal consent was taken from each and every individual preceding the question.

3.9. Data quality assurance

Before starting the actual survey, quality of the data was assured by pretesting the questionnaires on the area other than actual study area to decrease any bias associated with data collection Thought the course of data collection the data collectors was supervised and regular meeting will held to discuss between data collectors and principal investigator to correct problem which raised during data collection period. Every weekend the collected questionnaires were reviewed by supervisors and the Principal investigators to check for completeness. Finally the collected data were reviewed and checked for completeness before data entry.

3.10. Data processing and analysis

The collected questionnaires were checked manually for completeness; coded and entered into Epi Info version 3.5.1. After the entry was completed the data were exported to SPSS version 20.0 for analysis. Descriptive and summary statistics was done. Bivariate logistic regression analysis was used to check existence of association with each independent variable with the outcome variable. Finally Variables significant in bi-variate analysis ($P< 0.2$) were entered into a multivariate logistic regression model to adjust the effects of possible cofounders on the outcome variable. Odds ratio (OR) with 95% confidence interval (CI) was used to see strength of the association between independent variables and a dependent variable.

4. ETHICAL CONSIDERATIONS

To conduct this research project, ethical approval was obtained from Research Ethical Committee of University of Gondar and the coordinator of integrated emergency obstetrics/Gyn and surgery then officials at different level of the university hospitals was communicated through formal letters which was taken from UOG before the study. Verbal consent was obtained from each study subject prior to the data collection process preceded. Each respondent was informed about the aim of the study that it will contribute necessary information for policy makers and other concerned bodies. Any study participants not willing to participate in the study will not enforced to participant and they were also informed that all data obtained from them would be kept confidential by using codes instead of any personal identifiers and is meant only for the purpose of the study.

5 .Results

5.1 Socio- demographic characteristics of respondents

A total of 410 postnatal mothers' from FHRH participated in the study with 100% response rate. Three hundred fifty five (86.6) women were within age group of 20-34 and the mean ± SD of age of mothers' was 27 ± 5.3 years. One hundred forty five (35.4%) were with no formal education. Three hundred twenty four (79.0%) mothers came from urban area. The majority (95.6%) were married. One hundred sixty three (39.8%) were farmer while one hundred twenty (29.3%) were Government employee.

Two hundred ninety six mothers (72.2%) were Orthodox Christian by religion. Two hundred twenty (53.7%) were decide about service utilization with husband .One hundred forty five (35.4) had no formal education while104(25.4) primary education.

Three hundred twenty four (79.0%) were less than one kilometer distance from health facility to their home. The mean house hold income of postnatal mothers was 1317 ETB (Table2).

Characteristics	**No (%)**
Age (in years)	
<19 years	44(10.7)
20-34	355(86.6)
>35	11(2.7)
Religion	
Orthodox	296(72.2)
Muslim	55(13.4)
Protestant	59(14.4)
Marital status	
Married	392(95.6)
Single	18(13.9)
Educational status	
No formal education	145(35.4)

primary	104(25.4)
secondary	83(20.2)
above secondary	78(19.0)
Occupation	
House wife	79(19.3)
Government employee	120(29.3)
Farmer	163(39.8)
Merchant	48(11.7)
Residence	
Urban	324(79.0)
Rural	86(21)
Educational status of husband	
No formal education	102(24.9)
Primary	120(29.3)
Secondary	62(15.1)
Above secondary	108(26.3)
Decision maker service utilization	
Self	173(42.2)
With husband	220(53.7)
Other person	17(4.1)
Monthly income	
<1200 ETB	111(27.10
1201-2000 ETB	118(28.8)
2001-3500 ETB	88(21.5)
>3500 ETB	93(22.7)
Distance from HF	
<1 kilometer	324(79.0)
>2 kilometer	86(21.0)

5.2 Obstetrics characteristics of respondents

Majority of the respondents, 216(52.7%) were pregnant once and about, 217(52.9%) were gave birth once only. More than a quarter of women had live birth .The majority (90.0%) had ANC visits. One hundred forty five (35.4%) had four and above ANC visit. One hundred eighty seven (54.8) start ANC follow up from five –seven month of gestational age .Normal vaginal delivery was the commonest mode of delivery (69.5%) followed by C/S (caesarean section) (24.9%) and assisted delivery (5.6%). Three hundred thirty eight (82.4) were institutional delivery three hundred fifty two (82.4) were no obstetric complication while thirty four (8.3) women had hemorrhage (Table3).

Characteristics	**No (%)**
Number of pregnancy	
One	216(52.7)
Two-four	147(35.9)
five and above	47(11.5)
Parity (number including the new baby)	
One	217(52.9)
two-four	146(35.6)
5 and above	47(11.5)
Mode of delivery	
Spontaneous vaginal delivery(SVD)	285(69.5)
Caesarean section(C/S)	102(24.9)
Instrumental	23(5.6)
Fetal outcome	
Live birth	347(84.6)
Abnormal	55(13.4**)**
Dead	8(2.0)
Gestation at ANC started	
<four month	126(30.6)

Five-seven month	187(54.8)
Eight month and above	18(4.3)
Number of ANC visit	
One	41(10.0)
Two	98(23.9)
Three	86(21.0)
four and above	145(35.4)
Place of birth	
Home	72(17.6)
Health institution	338(82.4)
Obstetric complication	
Yes	58(14.1)
No	352(85.9)
Types of complication	
Hemorrhage	34(8.3)
PIH	15(3.7)
Sepsis	9(2.2)

5.3. Health information variables

301(73.4%) got health information from health worker, 55 (13.4%) from community, 47(11.5) media and 7(1.7%) friend. 242(59.0%) were informed danger sign of obstetric complications and about 166(41.0%) were not informed any obstetric complications. 290(70.7%) they were meet by health extension worker by schedule to discus about their health issue. About 120(29.3) respondent there had no availability of health extension worker at their home.

5.4. Knowledge about danger signs of obstetric complications

With regard to major danger signs of obstetric complications that may occur during pregnancy, the most frequently mentioned danger sign were vaginal bleeding and severe headache,286(69.8%),270(65.9%) respectively. Of the respondents, 231(56.3%) were stated three and above danger signs of obstetrics complication during pregnancy, while 179(43.7%) were stated below than three. Similarly the most frequently recalled danger signs of obstetric complications during labour and child birth, 291(71%) were vaginal bleeding followed by, 226(55.1%) convulsion. Among study participants about, 227(55.4%) were mentioned three and above, 183(44.6%) were mentioned below than three danger sign of obstetric complications during delivery. Regarding knowledge of danger signs of obstetric complications that can occur during postpartum period, majority 273(55.1%) of the respondents stated vaginal bleeding and about 214(52.2%) of the respondents stated high fever with or without abdominal pain. Of the respondents, 226(55.1%) were mentioned three and above and about 184(44.9%) were stated below three danger sign of obstetric complications during postpartum or perpurium period. More than half, 59% of study participants were knowledgeable about danger signs of obstetric complications and, 41% were not knowledgeable when overall knowledge of danger signs of obstetric complications during pregnancy, delivery and postpartum/perpurium period were assessed together and of them 116(28.%) don't know any danger sign.

Table4: Proportion of recalled danger signs of obstetric complications among postnatal mothers of FHRH, ,June –September,2015

	Proportion of mentioned danger sign during…

danger sign of obstetric complications	pregnancy		Childbirth		Postpartum	
	n	%	n	%	N	%
Vaginal bleeding	286	69.8	290	71	273	55
Severe headache	270	65.9	117	28.5	151	36.8
Convulsion	230	56.1	226	55.1	124	30.2
Loss of consciousness	158	38.5	180	43.9	196	47.8
Severe epigastric/abdominal pain	70	17.1	80	19.5	123	30
Blurring of vision	87	21.1			110	26.8
Increased/decreased fetal movement	210	49	126	41		
Fast or difficult breathing(dyspnea)	103	25.1				
Excessive vomiting	143	34.9				
Preterm labor(onset of labor before 37 weeks of gestation)	59	14.4				
Premature rupture of membrane	203	49.5				
Prolonged labor(lasting>12 hours)			166	40.5		
Retained placenta					174	42.4
Foul smelling vaginal discharge					197	48
High fever with or without abdominal pain					214	52.2
Don’t know any danger sign	115	28	116	28.3	117	28..5

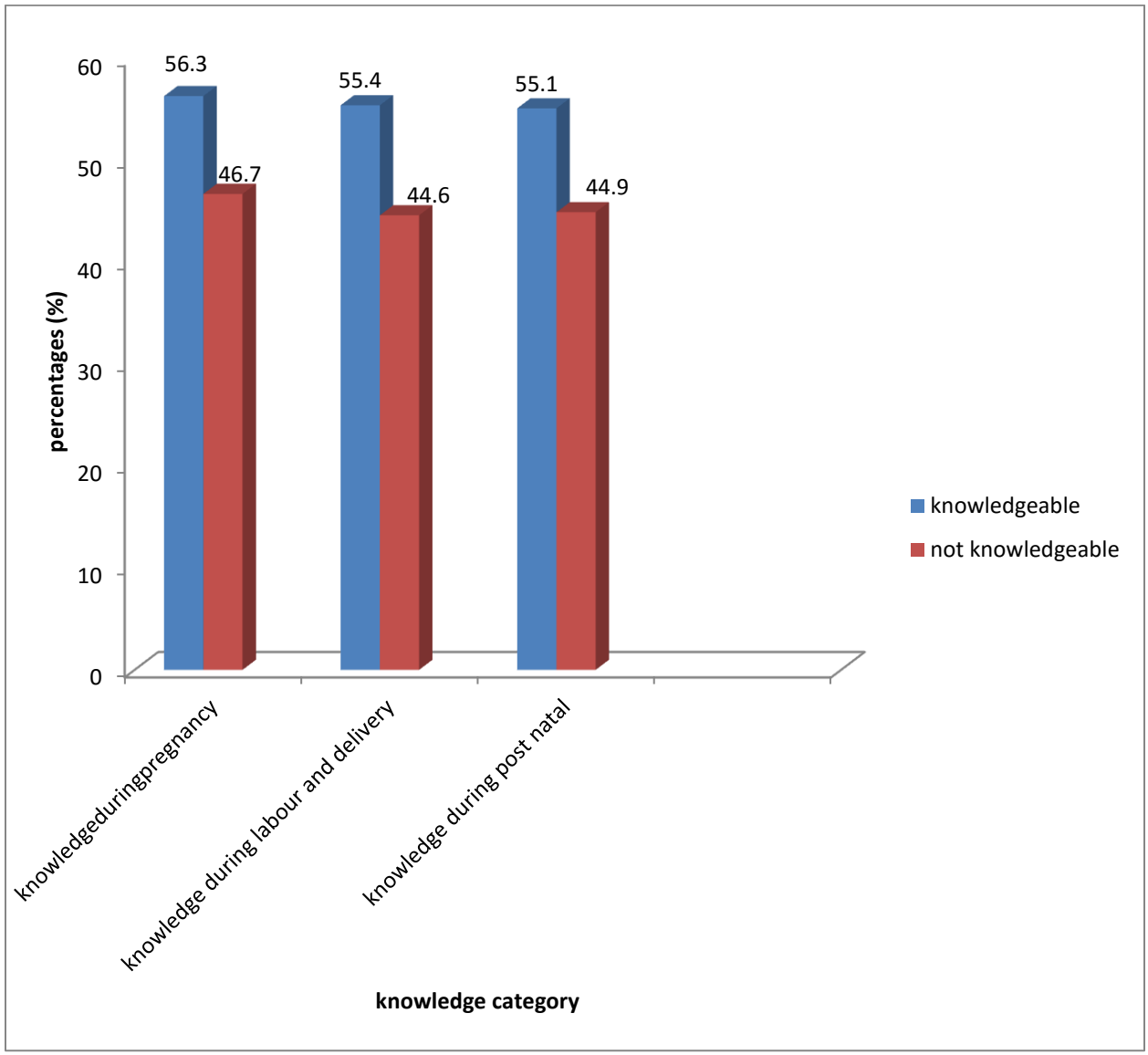
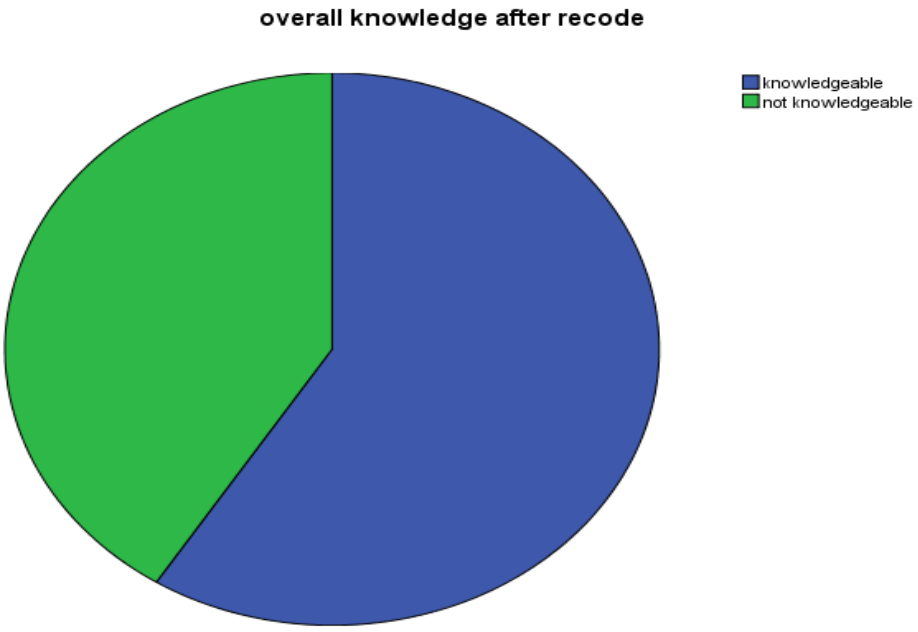


Figure 3; Dimensional representation of overall knowledge of respondents of FHRH post natal mother : during pregnancy, child birth and post partum 2015.

Figure 4: overall knowledge of respondent



5.5. Factors associated with danger signs of obstetric complications

When factors were checked for association, in bi-variate analysis the variables found to be significant were; age, place of residence, occupation, family monthly income, maternal educational status, husband educational level, decision making power, ,discus health issue with HEW, having ANC visit during last pregnancy , place of last delivery, number of pregnancy and source of health information. From those variables found to be significant in bi-variable analysis: educational status, monthly income, decision making power about services utilization and discus health issue with HEW were significantly associated with knowledge of danger signs of obstetric complication in multi-variate logistic regression analysis.

Mothers who attend above secondary school were about 7 times more likely to be knowledgeable as compared to mothers who had no formal education (AOR=6.86,95%CI (2.47,19.27).

Mothers whose monthly incomes were >3500ETB about 3 times more likely to be knowledgeable as compared to mothers whose monthly income were <1200 ETB (AOR=3.38, 95%CI: (1.20, 13.96).

Mothers whose decided about service utilization with husband 0.14 times less likely to be knowledgeable as compared to mothers whose decide by them self (AOR=0.14, 95%CI (0.07,0.27). Mothers who discus health issue with HEW was 4 times knowledgeable as compared to mothers who don't discuss health issue with HEW(AOR=4.23**,** 95%CI 1.83, 9.70).

Results of multivariate stepwise logistic regression indicated that Socio demographic related factors and obstetric characteristics were important predicators of the overall maternal knowledge of danger sign regarding obstetrics complication (Table 3).

Table 5: Bivariate and Multivariate analysis of factors associated with mothers' knowledge with danger sing obstetric complication in Felege Hiwot referral hospital June-September (n=410)

Variables	Overall knowledge		OR (95% CI)		P-value
	Knowledgeable	Not knowledgeable	COR	AOR	
Age					
<=19	24	20	1.00	1.00	
20-34	210	139	1.25 (0.41-1.45)	0.95(0.33-2.81)	0.95
>=35	8	9	0.74 (1.04-27.92)	4.30(0.51-35.72)	0.17
Educational status					
No formal education	59	86	1.00	1.00	
Primary	66	38	4.85(2.60-9.05)	2.91(2.47-19.27)	0.21
Secondary	57	26	1.91 (0.99-3.71)	4.94(2.68-5.57)	0.26
Above secondary	60	18	2.52(1.75-3.06)	**6.86(2.47-19.27)**	**0.00***
Occupation					
Government	64	15	1.00	1.00	
Housewife	57	63	4.71(2.42-9.18)	4.08(0.87-19.16)	0.07
Farmer	85	78	3.91(2.06-7.43)	6.55(1.20-35.63)	0.02
Trader	36	12	1.42(0.60-3.38)	1.91(0.42-8.56)	0.39

Residence					
Rural	97	102	2.31(1.54-3.45)	1.10(0.36-3.40)	0.85
Urban	145	66	1.00	1.00	
Income					
<1200	43	68	1.00	1.00	
1201-2000	55	63	7.61 (3.93-14.72)	1.38(0.48-3.96)	0.06
2001-3500	67	21	5.51 (2.88-10.54)	2.53(0.95-6.70)	0.37
>3500	77	16	2.50(1.72-3.12)	**3.38(1.20-13.96)**	**0.00***
Husbands education					
No formal education	37	65	2.52(0.90-7.06)	0.64(0.10-4.09)	0.64
Primary	72	48	5.54(3.04-10.07)	1.96(0.39-7.20)	0.47
Secondary	41	21	2.10(1.18-3.72)	0.96(0.26-3.49)	0.96
Above secondary	82	26	1.00	1.00	
Decision maker service utilization					
Self	62	111	1.00	1.00	
with husband	170	42	7.24(0.083-0.208)	**0.14(0.07-0.27)**	**0.00***
Other person	10	15	1.19(0.927-18.92)	0.29(1.04-2.06)	0.21
Number of gravid					
One	124	92	1.94(0.97-3.88)	1.20(0.43-3.32)	0.72
Two-five	84	63	1.96(0.95-4.02)	2.17(0.82-5.72)	0.11

Six and above	34	13	1.00		
ANC visit					
No	12	40	5.98(10.23-	7.24(0.50-104.64)	0.14
yes	230	128	554.18)		
			1.00		
Where did you give birth the most recent					
Home	51	21	0.53(0.30-0.92)	0.67(0.27-1.65)	0.38
Health institution	191	147	1.00	1.00	
Mode of delivery					
SVD	167	118	1.00	1.00	
Cesarean section	67	35	0.73(0.46-1.18)	0.76(0.37-1.58)	0.46
Instrumental	8	15	2.68(1.09-6.46)	2.66(0.77-9.17)	0.12
Your source of information					
Mass media	39	8	1.00	1.00	
Health personnel	185	108	2.72(1.23-6.04)	2.78(0.81-9.52)	0.10
Peer	10	5	12.19(1.99-74.290	6.06(0.59-61.26)	0.12
community	8	47	28.64(9.84-83.33)	2.37(0.38-14.69)	0.35
Discus about health issue with HEW					

No	15	105	1.00	1.00	
Yes	227	63	25.22(13.72-46.36)	**4.23(1.83-9.70)**	**0.00***

*Note: * statistically significant at P <0.05.*

6. DISCUSSIONS

According to this study; mother's knowledge regarding danger signs of obstetric complications was 59.0% which is consistent with research done in Tsegedie District(Ethiopia) (58.8%)(15);however higher than studies conducted rural Tanzania in ((51.1%) (23); Uganda (19%)(22), and Egypt (47.5)(19). The reason might be due to socio-cultural difference of study population and difference in health policy intervention strategy. Maternal knowledge is still not in line with coverage of ANC follow up in the area, like study done in the Uganda and Nigeria (21, 22).The reason for this finding might be due to low emphasis of danger signs of obstetric complications during ANC follow up among health service providers, or due to knowledge gap of professionals and poor information offering to the mothers.

The present study finding showed that, mothers' knowledge was higher than study done in Alelta Wondo, Sidama zone of Ethiopia(14) and Arba Minch town, Gamo Gofa zone(28) specifically; during pregnancy (56.3%), childbirth (55.4%) postpartum (55.1%) period (28).This discrepancy might be due to socio-cultural difference of study population and time gap between two study.

Finding of this study showed that; there is significant association between maternal educational level and knowledge of obstetric danger sign, which those who attend above secondary school were about 7 times more likely knowledgeable than women who had no formal education. In line with study done in India, Tanzania, Uganda, Nigeria, South Africa, Egypt and Ethiopia (14,15,

18-23). This might be due to the fact that, education is important for easily understanding of health message from different sources.

Finding of this study showed that; decision making power were significant association with knowledge of obstetric danger sign those who decided with their husband were about 0.14 times less likely to be knowledgeable as compared to mothers whose decide by them self. In line with study done in the Gamo Gofa zone of Ethiopia (28).The probable reason might be those who decide by them self can go for service any time without restriction.

There was statistical difference between family monthly income and women's knowledge level of danger signs obstetric complications. Women with family monthly income of > 3500 ETB were more knowledgeable than women with < 1200 monthly family income. This is in line with study done in Nigeria (21). This may be explained by; income is very important to visit health institution to seek medical services.

There was significant association between informing risk/discus health issue with HEW during ANC and knowledge of obstetric danger sign. Those who discus health issue with HEW were about 4 times knowledgeable than who don't discus. In line with study done rural Tanzania (23).The probable reason might be discussion very important to update and improve the knowledge of mother regarding obstetrics complication.

7. **STRENGTH AND LIMITATION OF THE STUDY**

7.1. STRENGTH OF THE STUDY

- Since the time gap between obstetrics phenomena and time of data collection was almost the same, the chance of recall bias was reduced.

7.2 LIMITATION OF THE STUDY

- Data were restricted to only danger sign of obstetric complication experience.
- Potential response biases often present in patient knowledge studies.
- Since Hospital based; its fail to address the situations of others who were outside the study area.

8. CONCLUSION AND RECOMMENDATIONS

8.1. CONCLUSION

- According to the finding of this study, significant number of mothers' still not knowledgeable about danger signs of obstetric complications. These showed that, mothers were not aware of their health condition during pregnancy; delivery and postpartum/perpurium period since they were not recognize it early. Therefore, they are more likely to delay to seek medical care at the time of emergency obstetric complications which majorly contributes to maternal morbidity and mortality. Discussing health issue with HEW,educational status, monthly income and decision making power about services utilization were significantly associated with mothers' knowledge about danger sign of obstetric complication among postnatal mothers

8.2. RECOMMENDATIONS

To Felege Hiwot referral hospital management

- ✓ Need for strategic plan to increase the women knowledge
- ✓ Integration of maternal health service with educational curriculum
- ✓ Call concerned body to facilitate income generating mechanisms
- ✓ Strength linkage with each health center and health post concerning programmed communication provision for mothers

To maternal health providers in the hospital

- ✓ Professionals need to have active role in educating all women during obstetric service provision.
- ✓ Focus on danger sign of obstetric complication during each period of pregnancy state specifically to raise their knowledge.

To researchers

- ✓ Another community based research should be carried out to know the knowledge gap among mothers in the area in general.
- ✓ Ways of health information delivery practice to the mothers during pregnancy, delivery and postpartum/perpurium period should be researched among health service providers specifically.
- ✓ Knowledge gap and practice among professional delivering the service should be assessed at community based.

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10. Annexes

Annex 1: Information sheet

Research description: This was study focusing on knowledge of danger sign of obstetrics complication and associated factors at Felege Hiwot Referral Hospital. It aims to assess knowledge of danger sign of obstetrics complication and associated factors.

Name of Principal Investigator: Merina Jewaro

Name of Organization**:** University of Gondar

Purpose of the study: To assess level of women knowledge regarding danger signs of obstetric complications and associated factors among postnatal mothers to raise women awareness about obstetric danger signs in the study area.

Procedure: Hospital based cross- sectional study was used after getting Ethical clearance from UOG and permission from Felege Hiwot Referral Hospital.

Risks: There is no any risk or discomfort that was faced by participating in this research except dedication of time for responding.

Benefits: There was no special benefit to the hospital. However, finding of this study would be used to implement intervention and reveal out knowledge gap regarding danger sign of obstetrics complication and associated factors

Confidentiality: Confidentiality of information was guaranteed in that the information collected were only be accessible to the principal investigator.

Compensation: No compensation was available for any process of data collection but we were very grateful to the hospital for taking part in this study.

Contacts:

Principal investigator: Merina JewaroPhone – 0913343489, Email:-merijewaro@gmail.com

Annex 2: Declaration of the investigator

I, the undersigned, MSC student declare that this thesis is my original work, except where otherwise acknowledged, this thesis has not been submitted for another degree award in this or any other university or institution.

Name: _____

Signature: _____

Date: _____

Place of submission: Department of Obstetrics /Gynecology and Surgery, College of medicine and Health Sciences, University of Gondar.

Date of submission: _____

This thesis work has been submitted for examination with our approval as university advisors.

Advisors:

Name	Signature
Mrs. Kedija Yenus (Mph/ Rh)	_____
Dr. Birhanu Abera (Gynecologist and obstetrian)	_____

Annex 3: Qeustionary

Instruction

Please encircle the number corresponding to the correct answer or write on the space provided

Table 1:-socio-demographic characteristics

s/n	Questions	Answer	Remark
Q101	How old are you?	_____in years	
Q102	What is your marital Status?	1. Single 2. married 3. widowed 4. divorced	
Q103	What is your religion?	1. Orthodox 2. Muslims 3. Protestant 4. Others	
Q104	What is the level of education you have completed?	1. No schooling 2. primary 3. secondary 4. above than secondary	
Q105	What is your current occupation?	1. government Employee 2. Housewife 3. Farmer 4. merchant 5. Others	
Q106	Where do you live?	1. Urban 2. Rural	
Q107	Distance from home to nearby health facility?	_____ In kilometer.	

Q108	Monthly income	_____ in birr	
Q109	What is your husband's level of education?	1. No formal education 2. Primary 3. Secondary 4. Above secondary school.	
Q110	Decision maker about the service utilization	1. Self 2. With husband 3. Other person	

Table 2: Obstetrics characteristics and source of information of respondents, Felege Hiwot Referral Hospital, North West Ethiopia

Q201	How many times were you pregnant?	1. One 2. Two –four 3. five and above	
Q202	How many children you have ever given birth to, regardless of the outcome?	1. One 2. Two –four 3. five and above	
Q203	Did you attend ANC during your last pregnancy?	1. Yes 2. No	If no skip to Q207
Q204	Where did you receive ANC during last pregnancy?	1. Governmental health institution 2. Private health institution 3. Other specify	
Q205	At what gestational age you have started ANC?	1. 4month and before 2. 5month-7month 3. Above 7 month 4. I don't know	

Q206	How many times you have visited ANC?	5. One times 6. Two times 7. Three times 8. Four times and above	
Q207	Where did you give birth of your most recent birth?	1. Home 2. Health institution	
Q208	What was mode of delivery?	1. spontaneous vaginal delivery 2. Cesarean section 3. Instrumental delivery 4. Others specify	
Q209	What was the neonatal outcome?	1. alive 2. Dead	
Q210	Have you ever experienced any of obstetric complications during your previous pregnancy and child birth?	1. Yes 2. No	If no skip to Q212
Q211	What type of obstetric complications you have faced?	1. Hemorrhage 2. PIH 3. Sepsis 4. Obstructed labor 5. Other specify	
Q212	What is source of your health information?	1. Mass media 2. Health personnel 3. friends 4. Community	
Q213	Is their health worker/health extension worker visit to discus about health issue?	1. Yes 2. No	

Table 3 . Knowledge questions regarding danger sign of obstetric complication at FHRH,2015

Q301	Do you have any information about danger sign of obstetric complications that may arise during pregnancy, childbirth and postpartum period?	1. Yes 2. No	
Q302	What are some of the serious health problems that can occur during pregnancy period that can endanger the life of mothers?		

Scoring:-1,√=mentioned 2, ×=not mentioned/don't know			
Danger sign of obstetric complication	1. √	2. ×	
Vaginal bleeding			
Convulsion			
Loss of consciousness			
Severe epi-gastric/abdominal pain			
Preterm labor(labor started before 37 weeks of gestation)			
Blurring of vision			
Difficulty of breathing			
Excessive vomiting			
Severe headache			
Passage of liquor early(before onset of labor)			
Decreased/increased fetal movement			
Others(specify)			

Q303	What are some of the serious health problems that can occur during labor and delivery period that can endanger the life of mothers?			
Scoring:-1,√=mentioned 2, ×=not mentioned/don't know				
Danger sign of obstetric complication		1. √	2. ×	

vaginal bleeding			
Convulsion			
Loss of consciousness			
Severe epi-gastric(abdominal pain)			
Blurring of vision			
Decreased/increased fetal movement			
Prolonged labor(labor lasting greater than 12hours)			
retained placenta			
Others(specify)			

Q304	What are some of the serious health problems that can occur during postpartum /perpurium period that can endanger the life of mothers?		
Scoring:-1,√=mentioned 2, ×=not mentioned/don't know			
Danger sign of obstetric complication	1. √	2. ×	
Excessive vaginal bleeding			
Convulsion			
Loss of consciousness			
Epi-gastric pain			
Blurring of vision			
Severe headache			
Offensive vaginal discharge			
High grade fever with or without abdominal pain			
Others(specify)			

ሰንጠረዥ 1፤ የ ማህራዊና ሥነ ህዝብ ሁኔታ

ተ/ቁ	ጥያቄዎች	ሜኒስ አሚራጭ	ይዘለል
101	እድሜ	_____ አሞት	
102	የ ጋብቻ ሁኔታ	1. ያላገባች 2. ያገባች	

		3. የ ተፋታች 4. የ ሞተባት	
103	ሐይማኖት	1. ኦርቶዶክስ 2. እስላም 3. ፕሮቴስታንት 4. ሌላ ካለ ይጥቀሱ	
104	የ ሞሪያ ቦታ	1. ገጠር 2. ከተማ	
105	የ ትምህርት ደረጃዎ	1. ሚደበኛ ትምህርት የለF ት 2. ከ1ኛ ደረጃ 3. 2ኛ ደረጃ 4. ከ2ኛ ደረጃ በላይ	
106	የ ስራ ሁኔታ	1. የ ማኅበስት ሠራተኛ 2. የ ቤት እማኬት 3. አርሶደር 4. ነጋዴ 5. ሌላ ካለ ይግለፁ	
107	ከቤት እስከ ጤፍ ተቋምያለዉርቀት ስንት ይሆናል?	_____በ	
108	የ ቤተሰብ ገቢ ስንት ነዉ?	_____በብር	
109	የ ባለቤትዎ ትምህርት ደራጃ?	1.ሚደበኛ ትምህርት የለለዉ 2.1ኛ ደረጃ 3.2ኛ ደረጃ 4.ከ2ኛ ደረጃ በላይ	

110	በህክምና አገልግሎት አሰጣጥ ዙሪያ የሚወስን አካል ማን ነው?	1. እኔ እራሴ 2. ከበለቤተ¶ር 3. **ሌላ ሰዉ**	

ሰንጠረ ዥር2@እርግዝና& ወሲድ^~የጤና ማረጃ የሚመለከት መጠየቅ

201	እስካሁን ስንት ጊዜ አርግዘዋል?	1. አንድ 2. ሁለት-አራት 3. አምስትና ከዛ በላይ	
202	በአጠቃላይ ስንት ልጆች ዋልደዋል?	1. አንድ 2. ሁለት-አራት 3. አምስትና ከዛ በላይ	
203	የሚጨሻ ልጆትን ሲወልዱየነ ፍሰ ጡፍ ክትትል አድርገው ነበር?	1. አዎ 2. የለም	የለም→207
204	አዎ ከሆነ ፤ የትነዉየተከታተሉት?	1. የመንግሥት ጤፍ ተቋም 2. የግል ጤፍ ተቋም 3. ሌላ ካለ ይግለፁ	
205	በስንተኛ ወር ነዉክትትል የጀሙት?	1. ሦስተኛ ወር እና ከዘበፈት 2. አራት ወር-ሰበትወር 3 ከሰበትወር	
206	ስንት ጊዜ ለክትትል ጤፍ ተቋምጎብኝተዋል?	1.አንድጊዜ 2.ሁለት ጊዜ 3.ሦስት ጊዜ 4.አራትና ከዛ በላይ	
207	የሚጨሻ ልጆትን የትነዉየወለዱት?	1.እቤት 2.ጤፍ ተቋም	

208	ሜልስዎ ጡፍ ተቋምከሆነ የወለዱበት ማንገድ ምን ነበር?	1.አምቼቼክ ሚህፀን 2.በቀዶ ህክምና 3.በሚህጸን በሚሳራያ በሚታገዝ 4.ሌላ ካላ ይግለፁ	
209	ሲወለድየልጅሽ ጤንነት እንዴት ነበር?	1.ጡሄ ኛ 2.ችግር ነበረዉ 3.በሕይወት አልነበረም	
e 210	ከዚህ በፊት በእርግዝና፤ በወሊድና ከወሊድ በኋላ ሊከሰቱየሚቹሉ በእርግዝናና ወሊድ ጋር የተያያዘ የጡፍ ችግር አጋጥሞት ያውቃል?	1.አዎ 2.የለም	የለም→212
211	አዎ ከሆነ ያጋጠሞት ችግር ምን ነበር?	1. ደምመፍሰስ 2.የደምግፊት ሜቼሮ 3.ኢንፌክሽን 4.የምጥ ሚራዘምእና መቹገር 5.ሌላ ካለ ይግለፁ	
212	ከጡፍቹ ጋር የተያያዘ ሚረጃ ከማዉ የምታገኙት	1. ከማክ ሚዲያ 2. ከጡፍ በለሞያ 3. ጓደኛ 4. ከእብረተሰብ	
213	በጡፍ ባለሞያ በየግዘ ትጎበኛላችዉ?	1. አዎ 2. የለም	

ሰንጠረዥ3: በእርግዝና&በወሊድ እና ከወሊድ በኋላ ሊከሰቱ የሚችሉ አደገኛ የጡት ምልክት ግንዛቤየ ሚመለከት ሚጃ

301	አደገኛ/አስፈሪ የጡት ምልክት የሚከሉት፤ በእርግዝና፤ በወሊድና ከወሊድ በኋላ ሊከሰቱ የሚችሉትን ችግሮች ያዉቃሉ?	1. አዎ 2. የለም	
302	ምልሰዎ አዎ ከሆነ ፤በእርግዝና ጊዜ ሊከሰቱ የሚችሉ አደገኛ የጡት ምልክት የሚከሉት ምን ምንናቸዉ?	ከታ ባለዉ ሰንጠረዥ የተሰጠዉን ምልክት በማከቀምይሞሉ	
1, =ገልፆል 2, =አልገለፁም/አላወቁም			

ደምጭሰስ			
የሰዉነ ት ማነቀጥቀጥ/አረፋ ማድፈቅ			
ራስን ማሳት			
ከፍተኛ ሆድህማም/ከጡት ስር የእማምስማት			
ጊዜ ሳይደርስ ምጥ ቀድሞመጀሚር			
የኣይን እይታ ማጨበርበር			
የሞትንፈስ ችግር/አተነ ፋፈስ ችግር			
ከፍተኛ የሆነ ቱዉከት			
ከፍተኛ የሆነ ራስ ምታት			
የእንሽርት ዉሃ ምጥሳይጀምር ማፍሰስ			
የልጅእንቅሥቃሴ መቀነስ/ማጨመር			
ለላ ካለ ይግለፁ			

e303	በወሊድ ጊዜ ሊከሰቱ የሚችሉ አደገኛ የጡት ምልክት የሚከሉት ምን ምንናቸዉ?	ከታች ባለዉ ሰንጠረዥ የተሰጠዉን ምልክት በማከቀምይሞሉ		
1, =ገልፆል 2, =አልገለፁም/አላወቁም				
ከፍተኛደምጭሰስ				
የሰዉነ ት ማነቀጥቀጥ				

ራስን ማሳት			
ከፍተኛ ሆድ ህማም/ከጡት ስር የእማምስ ማት			
የኣይን እይታ ማጨለር በር			
ከፍተኛ የሆነ ራስ ምታት			
የልጅ እንቅሥቃሴ ማቁነስ			
ምጥ ከ12 ሰዓት በላይ ማቆየት			
የእንግዴ ልጅ/ስንግ በጊዜ አለ ማውጣት			
የልጅ አቀማመጥ እና አማጥጥ ትክክል አለ ማሆን			
ለላ ከለ ይግለፁ			

e 304	ከወሊድ በኋላ ሊከሰቱ የሚቻሉ አደገኛ የጡፍ ምልክት የሚሉት ምን ምንናቸዉ?	ከታ ባለዉ ሰንጠረ ዥ የተሰጠዉን ምልክት በማከቀምይማሉ	
1, =ገልፆል 2, =አልገለፁም/አላወቁም			
ከፍተኛ ደምጭሰስ			
የሰዉት ማቁጥቁጥ			
ራስን ማሳት			
ከፍተኛ ሆድ ህማም			
የኣይን እይታ ማጨለር በር			
ከፍተኛ የሆነ ራስ ምታት			
ሽታ ያለዉየ ማህፅን ፈሳሽ			
የሰዉት ማቁት ማጨሚር			
ሌላ ካለ ይግለፁ			